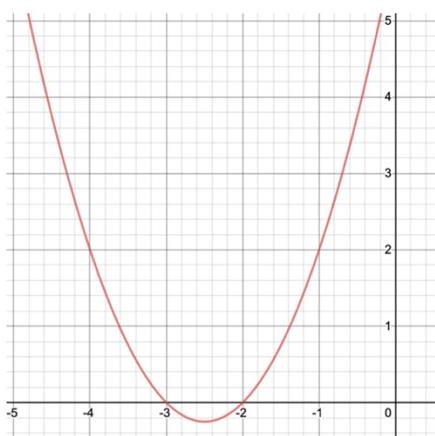


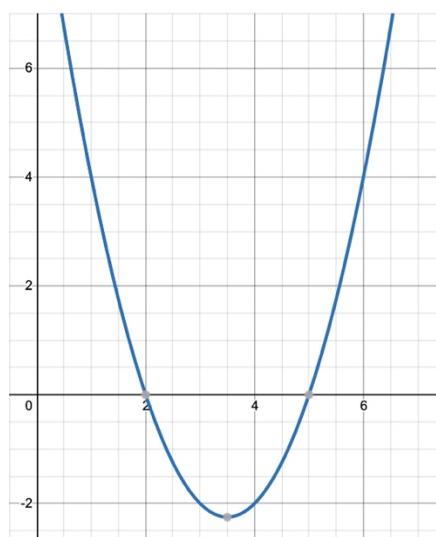
Algebra V (3) Difference of two squares

Do now:

What is the link?



$$y = x^2 + 5x + 6$$



$$y = x^2 - 7x + 10$$

Worked Example

$$x^2 - 4$$

Your Turn

$$x^2 - 25$$

$$2x^2 - 8$$

$$2x^2 - 50$$

Factorise

$$x^2 - 16$$

$$300 - 27x^2$$

$$x^2 - 25$$

$$300 - 12x^2$$

$$x^2 - 36$$

$$12x^2 - 300$$

$$36 - x^2$$

$$12x^2 - 3y^2$$

$$4 - x^2$$

$$3x^2 - 3y^2$$

$$100 - x^2$$

$$9x^2 - 9y^2$$

$$200 - 2x^2$$

$$9x^4 - 9y^2$$

$$300 - 3x^2$$

$$9x^4 - 9y^6$$

Factorise $4 - x^2$

$$\begin{aligned}4 - x^2 &= 2^2 - x^2 \\&= (2 + x)(2 - x)\end{aligned}$$

or $(2 - x)(2 + x)$

Factorise

10 $9 - x^2$

13 $a^2 - b^2$

16 $25 - x^2$

11 $36 - x^2$

14 $9y^2 - z^2$

17 $81 - x^2$

12 $100 - x^2$

15 $16 - x^2$

18 $x^2 - y^2$

Factorise $2x^2 - 8x - 10$

$$\begin{aligned}2x^2 - 8x - 10 &= 2(x^2 - 4x - 5) \\&= 2(x - 5)(x + 1)\end{aligned}$$

Now check to see if the quadratic expression factorises.

Factorise

10 $3x^2 + 12x + 9$

15 $4x^2 - 24x + 20$

11 $5x^2 - 15x - 50$

16 $3x^2 + 18x + 24$

12 $4x^2 + 8x - 32$

17 $5x^2 - 45$

13 $3x^2 - 12$

18 $3x^2 - 12x - 63$

14 $2x^2 - 18x + 28$

19 $18 - 3x - 3x^2$

Find $1.7^2 + 0.3 \times 1.7$

$$\begin{aligned}1.7^2 + 0.3 \times 1.7 &= 1.7(1.7 + 0.3) \\&= 1.7 \times 2 \\&= 3.4\end{aligned}$$

Find, without using a calculator

1 $2.5^2 + 0.5 \times 2.5$

5 $5.2^2 + 0.8 \times 5.2$

2 $1.3 \times 3.7 + 3.7^2$

6 $2.6 \times 3.4 + 3.4^2$

3 $5.9^2 - 2.9 \times 5.9$

7 $4.3^2 - 1.3 \times 4.3$

4 $8.76^2 - 4.76 \times 8.76$

8 $16.27^2 - 5.27 \times 16.27$

Find $100^2 - 98^2$

$$\begin{aligned}100^2 - 98^2 &= (100 + 98)(100 - 98) \\&= 198 \times 2 \\&= 396\end{aligned}$$

Find, without using a calculator

9 $55^2 - 45^2$

13 $10.2^2 - 9.8^2$

10 $20.6^2 - 9.4^2$

14 $13.5^2 - 6.5^2$

11 $7.82^2 - 2.82^2$

15 $8.79^2 - 1.21^2$

12 $2.667^2 - 1.333^2$

16 $0.763^2 - 0.237^2$